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LEGAL AND ENVIRONMENTAL RAMIFICATIONS OF THE CONCORDE

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On August 29, 1975, and September 21, 1975, respectively, British Airways and Air France applied to the Federal Aviation Administration (FAA)[1] for amendment of their respective operations specifications.[2] Usually, approvals of requested amendments to operating specifications are automatic, since they typically involve aircraft that were produced in the United States and certificated by the FAA, or aircraft that, although produced in a foreign country and certified by that country's counterpart to the FAA, were substantially the same as aircraft already in service in this country.

These requests for amendments,[3] however, stirred up a controversy that promises to be far-reaching and long-lasting—the request was for approval of Concorde, and was the first commercial passenger application of the supersonic aviation technology.[4] Although these requests for amendments have been cleared by the Secretary of Transportation, his approval spans only a sixteen-month trial period.[5] The Secretary directed the FAA to issue the provisional amendments on March 4, 1976,[6] subject to the follow-

[1] 49 U.S.C. § 1372(f) (1970).

[2] "Operating specifications" include a list of the type of aircraft to be flown, the routes and flight procedures to be followed, and the airports to be served. An application for operations specifications or for amendments thereto must be approved by the FAA before a foreign carrier may begin commercial service to the United States. *See* 14 CF.R. § 129 (1976).

[3] British Airways and Air France were requesting, respectively, authority for one daily flight each into Dulles International Airport (Dulles) outside of Washington, D. C. and two daily flights each into John F. Kennedy International Airport (JFK) on Long Island, New York.

[4] Newsweek, February 2, 1976 at 46. The U.S.S.R.'s TU-144, another supersonic transport began mail and cargo service between Moscow and Alma-Ata in January 1976.

[5] Department of Transportation, The Secretary's Decision on Concorde Supersonic Transport, February 4, 1976 at 3 [hereinafter cited as Secretary's Decision]. A sixteen-month period was selected to allow twelve months for data collection on the effects of Concorde and four months for analysis.

[6] The FAA issued the approved amendment to the operation specifications on April 20, 1976. Aviation Daily, April 20, 1976, at 293.

ing primary conditions:

1. No flights may be scheduled for take-off or landing except between 7 a.m. and 10 p.m. local time.
2. The British Airways flights must originate from Heathrow Airport and the Air France flights must originate from Charles de Gaulle Airport.[7]
3. The Concorde would not be allowed to fly over the United States at supersonic speeds.[8]
4. The FAA is authorized to impose such additional noise abatement procedures as are necessary and technologically feasible to minimize the noise impact.[9]

The Secretary also ordered the FAA to set up monitoring devices at Dulles International Airport (Dulles) outside of Washington, D.C. and John F. Kennedy International (JFK) outside of New York City to measure noise and emission levels and called for an international agreement to measure the effect of supersonic transport flights on the stratosphere and establish international stratospheric standards for supersonic transports.[10]

The Secretary's decision was followed by protests from various environmental groups and congressmen,[11] and there have been threats of lawsuits[12] and federal and state legislation[13] to prevent

[7] Secretary's Decision at 4 n.7. The Secretary believed it was equitable that the foreign citizens be subjected to the Concorde impact in a similar fashion to U.S. citizens.

[8] 14 C.F.R. § 91.55 (1976). This regulation prohibits operation of civil aircraft at speeds greater than the speed of sound except in accordance with the terms of a prior authorization issued to the operator.

[9] Secretary's Decision at 3-4.

[10] *Id.* at 4-5. The FAA has set up the monitoring system at Dulles and the State Dept. has an agreement with Britain and France on establishment of an international ozone monitoring system. F.A.A. News, 76-52, May 18, 1976. Preliminary results of this monitoring system indicate that Concorde is quieter than subsonic aircraft on landing, but noisier on take-off. Aviation Daily, May 26, 1976, at 138.

[11] The Washington Post, Feb. 5, 1976, at 1, col. 1.

[12] *Id.* The Environmental Defense Fund (EDF) has filed a motion appealing the decision in the U. S. Court of Appeals for the District of Columbia. This appeal was rejected on May 20, 1976. Aviation Daily, May 21, 1976, at 118. Groups in Virginia have indicated they will also file suit to keep Concorde out of Dulles. The New York Times, February 5, 1976, at 1, col. 8, indicates that several groups in New York may also attempt to block approval of Concorde by the Port Authority of New York and New Jersey, the regulatory body which controls JFK. (As the FAA operates Dulles, no further permission is necessary for Concorde's entry there.)

[13] The Washington Post, February 6, 1976, at 3, col. 1. The House passed

Concorde's entry into the United States.

This subject generates many questions, some of which have no answers at this time, but for proper analysis of the issues it is necessary to consider the legal ramifications of either admitting or denying Concorde's entry into the United States and to point out how these may bear on both environmental and international political issues.

I. BACKGROUND—DEVELOPMENT OF THE CONCORDE

In the mid-fifties, the supersonic transport became technologically possible due to development of supersonic aircraft in military aviation, such as the B-58. The underlying issue for commercial aviation, however, is whether any supersonic transport can be developed to meet the operational requirements of a commercially competitive aircraft, which the world's airlines would be able to finance and in which the public would have the confidence to travel.[14]

The initial designs for supersonic transports were developed in England, France and the United States, and their commercial and technical feasibility have been widely debated. On November 29, 1962, a formal Anglo-French agreement was signed which launched the Concorde project.[15] Since the initial agreement, the governments of France and Britain have spent thirteen years and approximately three billion dollars on the development of Concorde. On October 10, 1975, and December 5, 1975, the French and British aviation auhtorities awarded Concorde its airworthi-

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legislation for a six-month ban of Concorde on December 18, 1975, and there are indications by some Congressmen that further legislation aimed at preventing Concorde's entry will be forthcoming. The New York Times, February 24, 1976 at 1 col. 1. The New York Assembly passed noise legislation that would effectively ban the Concorde from JFK.

[14] A. STRATFORD, AIR TRANSPORT ECONOMICS IN THE SUPERSONIC ERA 284 (1967).

[15] Clark and Gibson, *Concorde* at 6 (1975). The design that finally became the Concorde was the product of the British Aircraft Corporation (BAC) and Sud-Aviation, a French corporation which became part of the nationalized SNIAS group, known as Aérospatiale. Although the agreement was signed by officials of both countries, it was negotiated by representatives of these two companies and it provided that France would do 60% of the work on the airframe while Britain would do approximately 60% of the engine work. The division of responsibility made in 1962 is still largely being used today.

ness certificates,[16] and on January 21, 1976, British Airways flew its first supersonic passenger service from London to Bahrein. Air France flew its first commercial Concorde flight from Paris to Dakar, Senegal and Rio de Janeiro, Brazil on the same day.[17]

This, then, is the prelude to Concorde's attempt to break into what it hopes to be the lucrative North Atlantic market.[18] Concorde has demonstrated that it can cut approximately three hours off the time it takes subsonic jets to cross the Atlantic,[19] but it must now demonstrate its economic viability as a commercial passenger vehicle if the developers hope to recoup any of the development costs through sales of new Concordes to other airlines.[20]

II. LEGAL CONSIDERATIONS

The rapid world-wide expansion of the aviation industry fostered a need for a system of laws in each country and agreements that would ensure safety for both domestic and international passengers and fairness in allocating routes. The United States and many other countries have enacted legislation and formed agreements to meet these objectives.

The three most important international agreements affecting Concorde are the Convention on International Civil Aviation (Chicago Convention),[21] and two relevant bilateral air transport agreements.[22] The Chicago Convention established the International Civil Aviation Organization (ICAO), which has multiple functions relating to international air travel, but whose primary

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[16] Aviation Week & Space Technology, Dec. 8, 1975, at 24.

[17] Newsweek, Feb. 2, 1976, at 46.

[18] For an indication of the significance of North Atlantic routes in international air transport, see charts prepared by the International Air Transport Association at IATA, *Report and Proceedings, 31st Annual General Meeting, Sept. 29-Oct. 2, 1975*, at 9, 42.

[19] Address by Brian Cookson, Journal of Air Law & Commerce Symposium, February 20, 1976.

[20] Newsweek, Feb. 16, 1976, at 19. Officials of Air France and British Airways have indicated that expected fares for Concorde will be approximately 20% higher than current first-class rates.

[21] 61 Stat. 1180, T.I.A.S. No. 1591 (August 9, 1946).

[22] United States-France Air Transport Services Agreement, 61 Stat. 3445, T.I.A.S. No. 1679 (March 27, 1946) [hereinafter cited as U.S.-France Agreement]; Bermuda Agreement, 60 Stat. 1499, T.I.A.S. No. 1507 (February 11, 1946) [hereinafter cited as Bermuda Agreement].

function is to ensure safety in international travel through safety of the aircraft itself and the safety of air traffic control systems.

Under the Chicago Convention, the aircraft of each contracting country which have been certified by that country as being airworthy are allowed to conduct non-scheduled, non-revenue flights into the territory of any other contracting country without obtaining prior permission;[23] the foreign carrier, however, cannot operate scheduled commercial service into a foreign country without express approval by that country.[24]

Routes for scheduled international travel are fixed by agreement between the individual nations, and the United States' bilateral agreements with France and Great Britain specify the route and apportion the service among the nations' flag carriers.[25] The bilateral agreements make no mention of the type of equipment that may be used.

Article 2 of the Bermuda Agreement, the bilateral agreement between the United States and Great Britain, provides:

> [t]he designated air carrier or carriers may be required to satisfy the aeronautical authorities of the Contracting Party granting the rights that it or they is or are qualified to fulfill the conditions prescribed by or under the laws and regulations normally applied by those authorities to the operations of commercial air carriers.

Article II(b) of the bilateral agreement between the United States and France contains an identical provision. Also, all three of these agreements provide that the laws of the country being entered will apply to aircraft of the foreign country while that aircraft is in the entered country's airspace.[26]

By virtue of these reservations of authority, the FAA may regulate all aspects of air operations dealing with safety, whether domestic or international air carriers are involved. Thus, the FAA has the authority to deny Concorde permission to operate in the United States, or it may place restrictions on Concorde operations,

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[23] Chicago Convention, Art. 5. In fact, Concorde has made flights of this nature into several U.S. airports such as Boston, Atlanta and Dallas.

[24] *Id.*, Art. 6.

[25] *See* U.S.-France Agreement, Art. II; Bermuda Agreement, Art. 2, note 21 *supra.*

[26] *See* Bermuda Agreement, Art. 5(1); U.S.-France Agreement, Art. V(a); and Chicago Convention, Art. 11, note 21 *supra.*

if unrestricted operation would be contrary to the policies of the United States as expressed in its environmental or safety laws.[27]

The practice of requiring operations specifications for foreign air carriers was dictated, in part, to allow the FAA to satisfy its mandate under Section 601 of the Federal Aviation Act "to promote safety of flights of civil aircraft in air commerce by prescribing . . . reasonable rules or regulations, or minimum standards . . . to provide adequately for national security and safety in air commerce."[28] A requested amendment of operations specifications can also trigger the application of other federal statutes. Here, as the FAA is allowing Concorde's operations this constitutes a "major Federal action significantly affecting the quality of the human environment," and the National Environmental Policy Act of 1969 (NEPA)[29] will apply. Both safety and environmental concerns, therefore, bear on the decision of whether to allow Concorde operations. Since this decision also encompasses questions of environmental and aviation policy and international relations, and the Department of Transportation Act of 1966 (DOT Act) charges the Secretary of Transportation with administering the Federal Aviation Act[30] and developing national transportation policies,[31] the Secretary of Transportation elected to make this policy decision himself.[32]

Also, as a part of this statutory framework, the mandates of the Noise Control Act of 1972[33] must be integrated into the considera-

[27] ICAO has authority under the Chicago Convention, Art. 37, to promulgate international standards for a wide range of aircraft operations, including noise and pollution standards for SSTs. Unless a contracting nation specifically excepts itself under Art. 38, it is bound to accept the ICAO standards as definitive. So far ICAO has developed no standards in this area, so the United States is free to regulate unilaterally Concorde operations in this country.

[28] 49 U.S.C. § 1421 (1974). *See also*, 49 U.S.C. § 1354(a) (1970).

[29] 42 U.S.C. § 4332 (1975). This section requires all agencies of the federal government to cooperate in developing a unified environmental policy and also mandates the submission of an Environmental Impact Statement (EIS) by the official responsible for the decision, here the Secretary of Transportation.

[30] 49 U.S.C. § 1655(c)(1) (1975). The duties relating to aircraft safety were transferred back to the FAA by this same section to ensure continuity of the FAA's safety programs.

[31] 49 U.S.C. § 1651(a) (1966).

[32] Secretary's Decision at 14.

[33] 86 Stat. 1234, *amending* 49 U.S.C. § 1431 (1972). Under the Noise Control Act, the Environmental Protection Agency (EPA) proposes rules to the FAA, which must publish the proposed rule in 30 days and commence hearings on the

tion given this question. Under this legislation, the FAA may promulgate such regulations governing aircraft noise as it finds to be necessary. The FAA has exercised this authority with respect to subsonic aircraft,[34] but has not proposed noise standards for supersonic transports, athough the Environmental Protection Agency (EPA) has proposed some alternatives.[35] This absence of noise standards for supersonic transports, then, only provides another factor to be considered.

From the foregoing it should be clear that neither international treaties nor domestic laws or regulations compelled a decision for or against allowing Concorde entry into the United States. Instead, the competing policy considerations were balanced to determine the final decision. The safety aspects of Concorde were determined by the FAA,[36] and the procedure for assessing the environmental impact was dictated by NEPA.[37] The reach of the NEPA has been held in *Calvert Cliffs' Coordinating Committee v. AEC*[38] to extend beyond the procedural requirements of preparing an environmental impact statement and prescriptions of other environmental laws and to require federal agencies and departments to engage in "a rather finely tuned and 'systematic' balancing analysis"[39] weighing any adverse effect on the environment against the benefits to be derived from technological progress. In this type of analysis,

rule in 60 days. Within a reasonable time the FAA must promulgate the rule, as proposed or modified, or publish a notice explaining why it decided not to promulgate the rule.

[34] *See* 14 C.F.R. § 36 (1975). The FAA promulgated this rule, Federal Aviation Regulations, Part 36 (FAR 36), after more than a decade of experience with jet aircraft. FAR 36 was orginally applicable only to aircraft certificated by the FAA after 1969. Adoption of legislation designed to bring older jets, which can now meet FAR 36 requirements through new technology, under this regulation is being considered.

[35] Secretary's Decision at 16, n.27. On February 27, 1975, EPA submitted to the FAA noise standards for the SST that would have made FAR 36 standards applicable to future production of supersonic transports, those in which substantive production effort was commenced after March 28, 1975. Since then, on January 14, 1976, the EPA submitted a new proposal to the FAA which would apply FAR 36 standards to all aircraft, including supersonic transports, that did not have flight time before December 31, 1974, the cutoff date applicable to subsonic aircraft. The FAA will publish this notice in the Federal Register.

[36] *See* note 27 *supra*. Safety factors were also part of the public hearing held on Jan. 5, 1976. 40 Fed. Reg. 53614 (1975).

[37] 42 U.S.C. § 4332 (1973).

[38] 449 F.2d 1109 (D.C. Cir. 1971).

[39] *Id.* at 1113.

the benefits were perceived to be the advantages of introducing commercial supersonic technology into the United States at this time, with its advantages to the American people, and the further benefits to be derived from the international effects of the decision.[40]

III. THE BALANCING PROCESS

Because this problem is multifaceted, the decision making process should encompass safety considerations and environmental concerns. These should then be assigned appropriate significance and measured against the proposed benefits.

The United States is required by Article 33 of the Chicago Convention and by the bilateral agreements to recognize as valid the certificates of airworthiness issued by any other member state, "provided that the requirements under which such certificates or licenses were issued or rendered valid are equal to or above the minimum standards which may be established from time to time pursuant to this Convention." Extensive minimum safety requirements have been established by the International Civil Aviation Organization (ICAO) in Annex 8.[41] This means that unless the United States notifies the ICAO of its intent to take exception under Article 38 of the Convention, to the extent that French and British airworthiness requirements meet or exceed those imposed by Annex 8, Concorde must by treaty be accepted as airworthy. This results in circumscribing the FAA's safety determination to some extent, as Concorde was previousy determined airworthy by the French and British aviation authorities.[42] The FAA, consequently, accepted those determinations respecting range, explosive decompression, exposure to cosmic radiation, and temperature shear, but conducted its own analysis on the issues of the safety of the departure turn from Runway 31 left at JFK International Airport in New York, air traffic procedures on the Eastern seaboard, installation of a fuel tank nitrogen inerting system, and

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[40] Secretary's Decision at 21.

[41] *See* I.C.A.O., Annex 8 (July, 1973). This annex provides international standards for airworthiness of aircraft.

[42] *See* note 15 *supra.*

wind shear.[43] On all of these points the FAA was satisfied that Concorde met the applicable safety standards.

The NEPA requires the preparation of an extensive environmental impact statement (EIS) by all agencies before undertaking "[f]ederal actions significantly affecting the quality of the human environment."[44] Pursuant to that directive, the FAA prepared an EIS that was released on November 13, 1975.[45] The Secretary of Transportation recognized that in evaluating the environmental costs of admitting Concorde—air pollution, noise, stratospheric impact, and fuel consumption—objective standards existed only for measuring the impact of noise and air pollution.[46] In evaluating the effect of Concorde's stratopheric emission, the community's response to Concorde noise, and fuel efficiency in commercial service, subjective judgments must be made, and at present there is a lack of substantive information on which to base such judgments.

Under Section 231 of the Clean Air Act,[47] the EPA has proposed supersonic aircraft emission standards that would apply to supersonic engines manufactured on or after January 1, 1979.[48] In comparison with these proposed standards, which have not been promulgated as final regulations, the current Concorde engine has higher emission levels for carbon monoxide and unburned hydrocarbons than would be permitted. The smoke number, which measures the amount of visible particles, would be slightly higher, and the level of nitrogen oxide emissions would probably meet the proposed standards.[49] Taking into account the number of proposed flights, time of day and wind conditions, the EIS determined Concorde's effect on air quality both at Dulles and JFK to be negligible.[50]

Although noise is capable of being measured objectively, both

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[43] Letter from John L. McLucas, Federal Aviation Administrator to Secretary of Transportation, Control No. 31134, Jan. 14, 1976.

[44] 42 U.S.C. § 4332(s)(C) (1973).

[45] 40 Fed. Reg. 53614 (1975).

[46] Secretary's Decision at 23.

[47] 42 U.S.C. 1857f-9 (1973).

[48] 39 Fed. Reg. 26653 (1974).

[49] Secretary's Decision at 27.

[50] *Id.*

as to intensity and length of perception by the human ear, human response to noise is a subjective evaluation.[51] Aircraft noise also has a low frequency component that induces vibrations in homes and buildings around airports. Because Concorde has five times the low frequency content of the noise of subsonic jets, one of the chief objections to Concorde overflights has been the fear that they would lead to extensive structural damage of buildings and annoying vibrations of dishes and other items loose on shelves.[52] Empirical evidence cited by the Secretary indicated that although vibrations induced by Concordes were greater than those induced by subsonic jets, there was nothing to suggest Concorde's vibrations would produce structural damage to buildings around airports.[53]

The most subjective factor involved in the question of noise is how it will be perceived by persons living in the flight path of Concorde and around JFK and Dulles. The EIS clearly establishes that Concorde will be noisier than the noisiest subsonic aircraft and will effect a wider area of land in square miles on both takeoff and landing.[54] Based on the Noise Exposure Forecast (NEF)[55] contours around Dulles and JFK, the EIS determined that approximately 2,000 additional persons would come within the noise contours of JFK because of Concorde, and 1,000 additional persons would be included in the Dulles contours.[56] Largely because of the subjective nature of evaluating this factor, the Secretary decided to await further empirical results before Concorde was denied entry for noise reasons.[57]

[51] 14 C.F.R. § 36 (1976). FAR § 36 standards attempt to take this into account by calculating aircraft noise in units of Effective Perceived Noise Level in decibels (EPNdB). These units attempt to factor into the aircraft noise event the relative "annoyance" of the event and the time duration.

[52] *See, e.g.*, The Washington Post, Feb. 5, 1976, at 1.

[53] Secretary's Decision at 43, n.55.

[54] According to the EIS estimate, on Concorde's takeoff 47.6 square miles of land are subjected to noise levels at or above 100 EPNdB, compared with 7.49 square miles for the B-707 and 2.91 square miles for the B-747, respectively. Preliminary results of the monitoring system indicate Concorde is noisier on take-off but quieter on landing than at least some subsonic jets. *See* note 10 *supra.*

[55] A Noise Exposure Forecast describes the cumulative noise impact of all the aircraft operating at a given airport during the course of a day. It includes corrections for such things as irritating whines and noises that occur in the late evening when they would be more disturbing. Secretary's Decision at 44.

[56] *Id.* at 47.

[57] *Id.* at 50.

Because of the questionable nature of any evaluation of noise perception, and despite further empirical data, this part of the decision may be relied on strongly by groups seeking to overturn the Secretary's decision.

The effect of the exhaust emissions of supersonic transports on the earth's ozone layer has been one of the most widely debated aspects of supersonic flight. The argument against the supersonic transport has been that the nitrogen oxide in the exhaust would combine with the ozone to break down the ozone molecule in a chemical reaction that produces a new nitrogen oxide molecule, which would combine with another ozone molecule, and so on. This ozone reduction is thought to allow an increase of the exposure to ultraviolet light which will cause an increase in certain types of skin cancer. This theory has received support in reports issued by the National Academy of Sciences[58] and by the Department of Transportation's Climatic Impact Assessment Program (CIAP).[59] Other groups, such as the World Meteorological Organization,[60] have disputed the ozone reduction theory.

Compared to other potential causes of ozone depletion such as cosmic radiation, volcanic activity, subsonic aircraft, accumulation of fluorocarbons from aerosol sprays, nitrogen fertilizers, and nuclear testing in the atmosphere, the potential risk of an increased incidence of non-fatal skin cancer due to current approval for six Concorde flights per day to the United States is lessened in impact.[61] This comparison is not meant, however, to imply that this risk is *de minimis*, but only that current data appears to be inconclusive.[62]

[58] National Academy of Sciences, Climatic Impact Committee, *Environmental Impact of Stratospheric Flight* (1975).

[59] Dept. of Trans., *CIAP Report of Findings: The Effects of Stratospheric Pollution by Aircraft* (Dec. 1974). Both the CIAP and NAS reports indicate that their results should be qualified by a factor of uncertainty of two to three, *either* way. Based on these reports, the EIS estimated that Concorde flights would reduce the density of the ozone layer by about .04 percent, resulting in an increase of an exposure of .08 percent. From these figures it was predicted that over a 30-year period of continuous operation, the proposed Concorde flights would add an average of 200 new cases of nonmelanomic skin cancer per year to the approximately 250,000 currently experienced in the United States.

[60] *See* Aviation Week & Space Technology, Jan. 12, 1976, at 15.

[61] Secretary's Decision at 40.

[62] The Consumer Product Safety Commission pointed to this same inconclusive information in refusing at this time to ban aerosal sprays. 40 Fed. Reg. 36419, 36421 (1975).

In terms of fuel consumption, the argument against utilization of supersonic transports is also inconclusive. In absolute terms, Concorde consumes more fuel per 3,000-nautical-mile trip than any of the subsonics except the Boeing 747, which can carry more than three times as many passengers as Concorde.[63] Because of its relatively small passenger capacity, Concorde also consumes more fuel per passenger mile than the subsonic jets, including the Boeing 747.[64]

These figures, however, will vary with the commercial load factor, which can only be determined in actual commercial operations. In essence, the question becomes whether the United States should ban Concorde as part of its stated national policy of fuel conservation, in spite of the fact that two foreign countries are the ones purchasing the fuel and choosing to allocate it to an inefficient machine. The Secretary's opinion was that the United States' responsibility to encourage fuel savings in other countries did not extend far enough to ban Concorde without a showing of significant fuel savings which could not be done presently.[65]

If the possible benefits of Concorde are to outweigh the potential adverse environmental consequences, they must be substantial. These benefits fall into two categories—technological and diplomatic.

The most obvious technological benefit is speed. Concorde, in spite of whatever else may be said about it, clearly reduces the travel time between the United States and Europe. The question then becomes whether such speed is truly necessary, and many critics of Concorde have concluded that it is not.[66] The benefit is possibly speculative, but as a premium price is also attached, it could be more desirable to have the results determined in the marketplace rather than by governmental fiat. Another potential technological benefit is further refinement of supersonic transport engines and designs to produce a more efficient and environment-

[63] Secretary's Decision at 29. Concorde consumes approximately 20,857 gallons of fuel on a 3,000-nautical-mile trip.

[64] *Id.* Flying full, Concorde consumes .063 gallons of fuel per passenger mile, or about 16 miles per gallon per passenger. The least efficient transatlantic subsonic, the Boeing 707-300, also flying full, consumes .030 gallons of fuel per passenger mile, or approximately 33 miles per gallon per passenger.

[65] *Id.* at 33.

[66] *E.g.*, Wilford, New York Times, Feb. 8, 1976, Sec. 4 at 1.

ally acceptable model in future years. Again, this benefit is speculative, as it may well depend upon a showing of economic viability that will justify further development.[67]

International diplomatic considerations provide the remainder of the benefit equation, albeit in a negative fashion. The benefit to the United States comes in avoiding alienation of England and France, and avoiding the appearance of discrimination against foreign-developed technology. Since the Concorde venture represents a thirteen year commitment of nearly three billion dollars by the British and French governments, there is both national prestige and future economic stability connected with Concorde. Without a compelling national interest to justify the ban of Concorde, such a decision could easily be viewed as discriminatory treatment of foreign interests and lead to overt economic reprisals[68] and international ill will. On analysis, largely because of insufficient data at the present, none of the potential adverse environmental consequences seem to be so "compelling" at this time.

IV. CONCLUSION

Even though the environmental costs of six daily flights by Concorde into the United States did not appear significant enough to the Secreary of Transportation to deny Concorde entry,[69] it is fairly clear that this early approval will not be the last word.[70] It appears certain, at this time, that additional future litigation and possible legislative action will delay the first Concorde flights into JFK and even though Concorde flights are currently landing at Dulles there is no assurance they will continue for the full sixteen month term authorized.

The remaining uncertainty is whether Concorde will prove economically feasible. Editorial writers are already predicting that the marketplace will doom Concorde before it has a chance to accomplish substantial environmental damage,[71] and some airline execu-

[67] This is the view expressed by the Acting Administrator of the National Aeronautics and Space Administration in a letter dated Dec. 24, 1975, in support of admission for Concorde.

[68] *See* Aviation Week & Space Technology, Jan. 12, 1976, at 12, col. 1.

[69] Secretary's Decision at 57.

[70] *See* notes 12 and 13 *supra*.

[71] Wall Street Journal, Feb. 5, 1976.

tives with Air France and British Airways have apparently expressed the same fears.[72] There are some indications, though that the Concorde will be able to attract sufficient passengers.[73]

Simply, the vote is still out on Concorde, both in terms of its environmental effect and its marketability. The stage is set for the sixteen-month play, but the characters have not all assumed their places as yet. Like many plays en route to Broadway, Concorde may die in Washington, or it may be forced to close after a short stint. It is too soon to tell.

[72] Newsweek, Feb. 16, 1976, at 19, col. 1.

[73] Aviation Daily, May 14, 1976, at 79. A marketing survey in Germany showed that 40-50% of the first-class passengers surveyed would be willing to pay the higher Concorde fares.